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U1S S1089 S2120

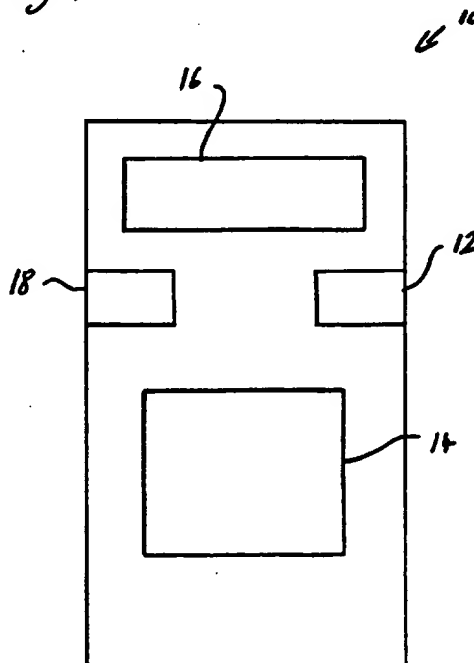
(56) Documents Cited  
None

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UK CL (Edition O) G4A AADB, G4H HDC HDW HJ  
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## (54) Component identifying system

(57) A system (10) for identifying the existence of a predetermined component in a product, such as in an item of food, includes input means e.g. keyboard (14) for inputting the component, code identifying means (12) such as a barcode scanner for identifying a code associated with the product, processing means using a database for determining whether the product associated with the identified code contains the component and an indicator (16) such as a display for indicating to the user the result of the determination. The system is particularly useful for identifying food components to which the user is allergic or which the user needs to eat for a specified diet.

Fig. 1



At least one drawing originally filed was informal and the print reproduced here is taken from a later filed formal copy.

The claims were filed later than the filing date within the period prescribed by Rule 25(1) of the Patents Rules 1995

Fig. 1

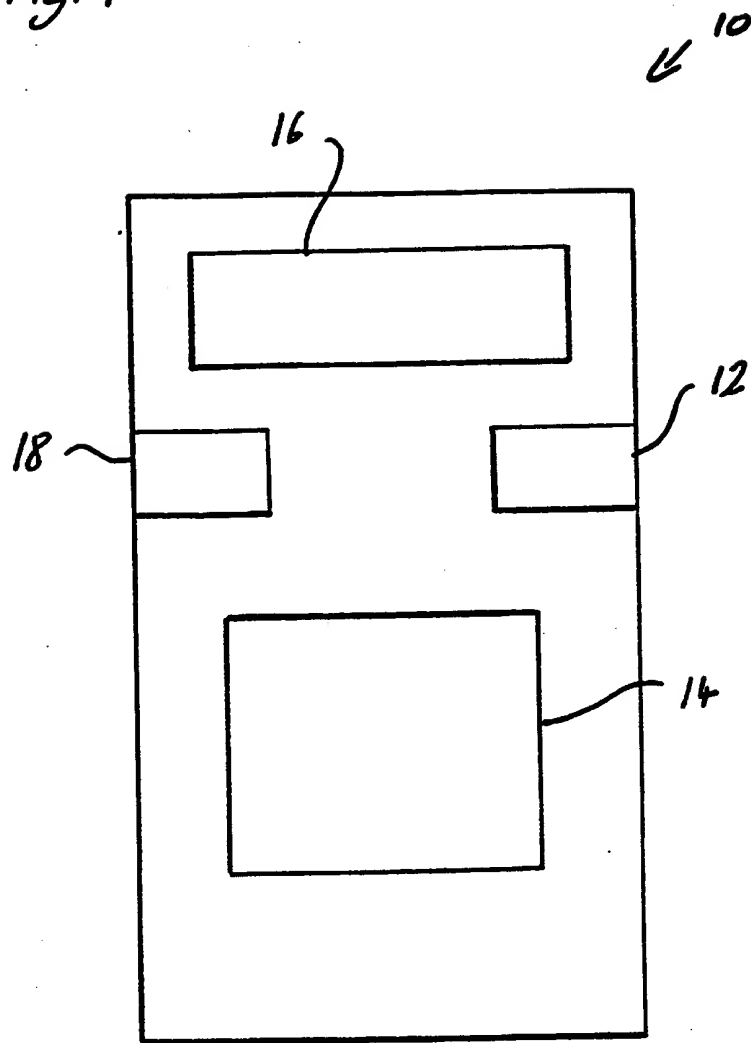




Fig.2

Pack Barcode

SCAN provides unique 'item' product code

Database (in scanner memory)

501234555555,

509999912345,

A, Q, W, 500

B,D, 1000

Where  
A-Z = 'Allergic'  
Ingredients

500 = Calorif Value

Screen on Scanner

**"NUT ALLERGY" - NO PURCHASE ADVISED**

because User has previously entered

A = NUT on entry prompt to system.

COMPONENT IDENTIFYING SYSTEM

The present invention relates to a method and apparatus for identifying the existence of one or more predetermined components in a product.

- 5     The preferred embodiment is directed to a system for facilitating the selection of food products, for example for people who have allergies to particular foods or who have particular dietary requirements, such as the need to avoid certain food products. The preferred system  
10    could also be used in cases where a particular food product should be taken as part of a diet.

- 15    According to an aspect of the present invention, there is provided apparatus for indicating the existence of a predetermined component in a product comprising input means for inputting a predetermined product component; code identifying means for identifying a code associated with a product; means for obtaining product component data from a memory store on the basis of the identified  
20    code; means for determining whether the product includes the predetermined component; and indicating means operable to indicate the existence of the predetermined component in the product.

- 25    The input means is advantageously able to input a plurality of product components, such that the apparatus can indicate the existence of any of a plurality of products. The indicating means may, in such a case, be able to indicate which component or components exist in  
30    the product in question.

- 35    The system is particularly useful for food products in consumer situations. For example, a consumer can enter into the apparatus food components or constituents which it is not desired to consume, such as foods to which the user is allergic or foods not complying with a particular diet, and to be warned which products tested include the identified constituent or constituents. The

system is also useful in other consumer situations and indeed in any situation where the composition of a product is not known to the user but where the user needs to be warned of one or more particular constituents.

Preferably, indicating means is provided for indicating the existence of the predetermined component in the product. The indicating means may be a visual indicator such as a display or lamp, an acoustic or vibratory device, any combination thereof or any other suitable indicating means.

The code is preferably a barcode, the code identifying means being barcode identifying means. For this purpose, the apparatus may include barcode scanning means or coupling means which can be coupled to a barcode scanner. This embodiment is particularly useful for consumer products, which normally carry barcodes according to the internationally accepted European article numbering (EAN) system, such as EAN13 and EAN8.

The apparatus preferably includes a database of product composition arranged according to the product code. This database may include all the components of the product or only those which are most likely to be the subject of identification by a user. The database may include the product composition either as the composition itself or as a series of code designators for the components of the product. In the preferred embodiment, the database includes the code, a product description and code designators for each product in the database.

In an embodiment, the input means includes means to display to a user a list of components for selection as the predetermined component or components.

According to another aspect of the present invention,

there is provided a method of indicating the existence of a predetermined component in a product comprising the steps of inputting a predetermined product component; identifying a code associated with a product; obtaining  
5 product component data from a memory store on the basis of the identified code; determining whether the product includes the predetermined component; and, if the product contains the predetermined component, indicating the existence of the predetermined component in the  
10 product.

An embodiment of the present invention is described below, by way of illustration only, with reference to the accompanying drawings, in which:

15 Figure 1 is a schematic diagram of an example of scanner and database system for use in a consumer food environment; and

20 Figure 2 is a schematic flow chart of the manner in which the device of Figure 1 operates.

Referring to Figure 1, the example of scanner and database system 10 shown is intended for use by a  
25 consumer in a supermarket or the like. The system is used to determine and warn of chosen ingredients which the user should or should not consume. For, example, for a user who is allergic to nuts, the system is intended to warn the user whether a particular food  
30 product includes nuts.

In the embodiment shown, the system 10 is designed to operate on the basis of barcodes provided on packaged foods. For this purpose, the system 10 includes a  
35 barcode scanner 12, shown only in schematic form, which is able to read the barcodes on food products under the control of a control system (not shown), such as a microprocessor. Since food products are barcoded on the basis of the European Article Numbering System, such as

EAN13 and EAN8 or a derivative thereof, the actual product can be identified from the barcode, irrespective of the shop or food manufacturer.

5

The system includes a database (not shown) which is accessed on the basis of the barcodes. The database includes, in the preferred embodiment, a description of the product, for assisting the user, and data relating to the ingredients of the food product. The database may include all the ingredients of each product or only those most likely to be of interest to the user, such as those causing known allergies, those not suitable for people with certain illnesses such as diabetes, and those having "unacceptable" calorific value or fat content. The ingredient data could be stored as code designators which are translated into their actual ingredients for versions where the actual ingredients are notified to the user.

20

The system 10 could also or in the alternative provide for ingredients which the user should consume, for example for dietary reasons. These may, for example, be iron for a user suffering from anaemia.

25

For either purpose, the system may be set to take into account ingredient quantities rather than just ingredient presence.

30

The system 10 is provided with an input unit 14, which may be of any suitable form, such as an alpha/numeric key pad. A display 16 is also provided, which again may be of any suitable form such as a liquid crystal display or equivalent. The display 16 provides data input information and results of the determination of a particular food product.

35

Additionally or alternatively, the system 10 may include an acoustic indicator such as a loudspeaker or buzzer to

inform the user of the results of its determination of a food product. Similarly, instead of displaying the results on a display such as the display 16, the system 10 may be provided with any other suitable visual indicator, such as one or more LEDs.

An example of the method by which the system of Figure 1 may operate is shown in Figure 2.

10 In summary, the control and processing unit within the system decodes the barcode, looks up the appropriate database record and displays or otherwise indicates to the user, by an acoustic or visual indicator, whether it is safe or wise for the user to purchase that food  
15 product. For programming purposes, the display 16 provides an "entry" screen in which prompts the current user to identify any allergy for which the system 10 is to check, any calorific or similar parameter which the user requires and/or any other ingredient of which the  
20 user wants to be warned. In the case where the system is to be used by a plurality of users, the system can be reprogrammed by each user or the system 10 can include a memory (not shown) in which can be stored the relevant ingredient data for a plurality of users, for subsequent  
25 retrieval by means of an identification number or code.

In an alternative embodiment, data input for a user may be by means of a separate personal computer which can be linked to the system 10.

30 The warning given by the system 10 could be a simple yes/no warning or more specific information as to the particular food product, for example quantity of the ingredient in the product. In the embodiment shown in  
35 Figure 2 the system 10 is designed to give a simple yes or no indication as to the existence of the ingredient in the food product tested and calorific data.

The presently preferred mode of operation is as follows.



**Stage 1**

The barcode scanner system 10 is pre-loaded with software that allows simple entry of the user's allergy, diabetic or dietary condition(s), utilizing a simple menu or directory provided within the system 10 from a similar computer programme offered on a personal computer, which is downloaded to the system 10 with a suitable communications port (not shown).

**Stage 2**

The user is then able to scan any product containing an EAN barcode or a derivative thereof, at which point the system's software will check the ingredient database for any condition found that has been pre-programmed by the user, and report to the user in either visible and/or audible form that the scanned product contains one or more ingredients which it is inadvisable to consume based on the pre-programmed conditions.

The database of product ingredients and their 'allergic' or other conditions is stored in memory as an integral part of the system.

The software within the system 10 will advise the user of any product containing 'unacceptable' ingredients to the user and the system may be capable of printing a hard copy version of all products selected and/or the total calorific value of the products selected.

Referring to Figure 2, the user has programmed into the system 10 an allergy to nuts. When the barcode of the food product having barcode 501234555559 is scanned, the control and processing unit of system 10 accesses the database at a location equivalent to barcode 501234555559, at which the database has ingredient codes A, Q, W and a calorific value for the product of 500 (preferably normalised to a predetermined product quantity). In this example, ingredient code A refers to nuts, so the system 10 displays on display 16 the

message "Nut Allergy - No Purchase Advised".

5 It will be apparent that the system described above  
could be used in other applications, for example any  
other application where the consumer wishes to be warned  
of particular ingredients in a product.

10 It will be apparent that although the system 10 would  
normally be software controlled, it could be designed  
primarily on the basis of hardware components.

CLAIMS

1. Apparatus for indicating the existence of a predetermined component in a product comprising input means for inputting a predetermined product component; code identifying means for identifying a code associated with a product; means for obtaining product component data from a memory store on the basis of the identified code; means for determining whether the product includes the predetermined component; and indicating means for indicating the existence of the predetermined component in the product.
2. Apparatus according to claim 1, wherein the input means is able to input a plurality of product components.
3. Apparatus according to claim 1 or 2, wherein the indicating means includes a visual indicator, an acoustic or vibratory device or any combination thereof.
4. Apparatus according to claim 1, 2 or 3, wherein the code identifying means includes barcode identifying means.
5. Apparatus according to any preceding claim, including a database of product composition arranged according to the product code.
6. A method of indicating the existence of a predetermined component in a product comprising the steps of inputting a predetermined product component; identifying a code associated with a product; obtaining product component data from a memory store on the basis of the identified code; determining whether the product includes the predetermined component; and, if the product contains the predetermined component, indicating the existence of the predetermined component in the product.

7. A method according to claim 6, wherein the product code is a barcode and the step of identifying a code associated with the product identifies the barcode.
- 5 8. A method according to claim 6 or 7, including the step of determining the product component data from a database of product composition arranged according to the product code.
- 10 9. Apparatus for indicating the existence of a predetermined component in a product substantially as hereinbefore described with reference to and as illustrated in the accompanying drawings.
- 15 10. A method of indicating the existence of a predetermined component in a product substantially as hereinbefore described with reference to and as illustrated in the accompanying drawings.



Application No: GB 9611788.2  
Claims searched: 1-10

Examiner: Mike Davis  
Date of search: 6 February 1997

**Patents Act 1977**  
**Search Report under Section 17**

**Databases searched:**

UK Patent Office collections, including GB, EP, WO & US patent specifications, in:

UK CI (Ed.O): G4H (HJ,HDC,HDW), G4A (AUSB)

Int CI (Ed.6): G06F, G06K

Other: Online: WPI

**Documents considered to be relevant:**

Category	Identity of document and relevant passage	Relevant to claims
	None	

X	Document indicating lack of novelty or inventive step	A	Document indicating technological background and/or state of the art.
Y	Document indicating lack of inventive step if combined with one or more other documents of same category.	P	Document published on or after the declared priority date but before the filing date of this invention.
&	Member of the same patent family	E	Patent document published on or after, but with priority date earlier than, the filing date of this application.

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